

HOW I DO IT

Extended Lymphadenectomy Including Lymph Nodes Along the Superior Mesenteric Artery for Right Colon Cancer

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INTRODUCTION

It is speculated that the extended lymphadenectomy including lymph nodes along the superior mesenteric artery (SMA) may be important for achieving a more radical right colon cancer resection [1,2]. However, the usual limitation of lymphadenectomy is the inferior border of the pancreas due to difficulty dissecting the lymph nodes along the SMA by the standard technique. We safely performed extended lymphadenectomy including the lymph nodes along the SMA for right colon cancer with mobilization of the spleen and distal pancreas.

SURGICAL TECHNIQUE

The lymph node numbering and the extent of lymphadenectomy were based on the General Rules for Clinical and Pathological Studies on Cancer of the Colon, Rectum and Anus [3]. Laparotomy is performed using a vertical midline incision. Mobilization of the entire colon is carried out to identify the head of the pancreas and the left side of the superior mesenteric vein (SMV). The ileocolic, right colic and middle colic vessels are exposed, ligated and divided at the junction with the superior mesenteric vessels. Consequently, for cancer of the right colon, the standard lymphadenectomy of the surgical trunk (D3) is performed. Moreover, the infrapyloric and gastropiploic lymph nodes (nos. 206 and 204, lymph nodes) are removed because retrograde metastasis to lymph nodes along the greater curvature of the stomach occurs [4].

After mobilization of the duodenum and the head of the pancreas, the inferior vena cava and left renal vein are exposed. In the space superior to the left renal vein and behind the head of the pancreas, the pulsation of the SMA is identified with the surgeon's index finger. The SMA, including the surrounding nerve plexus, is isolated

along a length of vessel tape. If uncontrollable hemorrhage occurs during serial removal of lymph nodes along the superior mesenteric artery (no. 214, lymph node), hemostasis can be achieved by clamping the SMA guided with the vessel tapes. Therefore, this procedure is very important.

The surgeon changes position to the patient's left side. Mobilization of the spleen and distal pancreas is performed. The spleen and the distal pancreas are elevated and rotated to the patient's right side. In so doing, a good operative field is obtained for serial lymphadenectomy of the no. 214 lymph node. The adventitia of the SMA is exposed and lymphadenectomy is performed from the stump of the middle colic artery to the point where the SMA arises from the abdominal aorta.

The SMV is retracted to the patient's right side and the SMA is retracted to the patient's left side. The fatty tissues located between the SMA, the SMV, and the pancreatic uncinate process are completely removed. Consequently, an extended lymphadenectomy, including the lymph nodes along the SMA and SMV, is completed (Fig. 1).

This operation was employed in four patients. However, none of the four experienced either intractable diarrhea or complications associated with extended lymphadenectomy, and none required blood transfusion. From the standpoint of postoperative quality of life, extended lymphadenectomy including the no. 214 lymph node is not inferior to the standard lymphadenectomy (D3) in right hemicolectomy.

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Fig. 1. Extended lymphadenectomy including the lymph nodes along the SMA and SMV is carried out. AO, abdominal aorta; PANC, pancreas; SMA, superior mesenteric artery; SMV, superior mesenteric vein; UN, pancreatic uncinate process; MCV, stump of middle colic vein; MCA, stump of middle colic artery.

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